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MANAGEMENT AUDIT REPORT
of
FUEL ACCOUNTABILITY AND CONTROL PROCEDURES

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Motor fuels -- CA -- Los Angeles


by

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INTRODUCTION

At the direction of the Governmental Operations Committee of City Council, this Office has completed an audit of the City's fuel accountability and control procedures. The audit includes analysis of procedures for ordering and receiving bulk fuel from the vendor, the safeguarding of fuel inventories, and the fuel dispensing operations at City sites.

The audit centered on the operations administered by the Petroleum Products Administration, Supplies Department which purchases and delivers approximately six million gallons of fuels to 81 locations comprised of 75 fuel dispensing sites, 3 fuel storage sites, and 3 tank trucks in Council controlled departments. The funding for fuel used by these departments is appropriated to the Supplies Department budget.

The audit did not include the fuel operations controlled by the Department of Airports, Harbor, and Water and Power which purchase and dispense their own fuel. Because of the Citywide operations of the Department of Water and Power, this Office will look further into the possibility of integrating Water and Power fuel operations with City operations.

This study will be performed as part of the analysis of Water and Power operations currently done by the Office, and will be coordinated with the report requested by Council regarding cost savings resulting from the implementation of a General Services Department. A general review of fuel operations was made in the Fire and Police Departments which control their own fuel budgets, fuel purchases and fuel dispensing operations.

The following table illustrates the number of fueling sites controlled by City Departments and the quantity of fuel purchased for each for a six month period.

FUEL DELIVERIES IN GALLONS FOR ALL DEPARTMENTS
(EXCEPT WATER AND POWER)

July 1, 1977 through December 31, 1977

<u>Department</u>	<u>No. of Fuel Sites</u>	<u>Gasoline</u>	<u>Diesel</u>	<u>Aviation Gasoline</u>	<u>Aviation Turbine Fuel</u>
Airport	--	120,027	17,901		
Fire	104	311,532	51,235		
Harbor	--	88,008	12,268		
Police	19	2,294,106	--		
Supplies	81	<u>2,206,181</u>	<u>1,124,087</u>	<u>27,840</u>	<u>225,478</u>
Total		<u>5,021,854</u>	<u>1,205,491</u>	<u>27,840</u>	<u>225,478</u>

In conducting this audit, operations and records in the Petroleum Products Administration, Supplies Department were analyzed, various fuel sites were visited, numerous City departmental personnel were interviewed, Los Angeles County operations were reviewed, and State auditors were contacted. A questionnaire was sent to all fuel site administrators requesting information as to their cost of operations, closing of sites, and soliciting recommendations for improvement of City fuel control. A visit was also made to the City's primary fuel vendor.

SUMMARY

A major conclusion of this audit concerning the control over the City's fuel is that regardless of the completeness of the procedures, data recording, and processing of reports governing the fuel operations, City fuel could be obtained and used for unauthorized purposes. Even though there was no apparent or deliberate wrong doing uncovered during this audit, a number of examples were brought to the attention of the auditors as to how even the most carefully designed fuel control system could not prevent some unauthorized use of City fuel. In light of this, the objective of this audit is to recommend an economically feasible fuel control system which would account for City fuel and to a reasonable degree prevent unauthorized uses. It would serve no purpose to recommend a system where the cost of control exceeds the cost of potential unauthorized uses.

The most significant single problem in fuel accountability is the lack of clearly defined responsibilities among participants in the process. In general, the written procedures for controlling bulk fuel ordering and receiving at City sites are adequate. No major discrepancies were uncovered in this area, nor were any brought to the attention of the auditors. On the other hand, current written procedures for controlling fuel dispensing operations at sites are inadequate and should be revised. Compliance with procedures is also unsatisfactory. Responsible departments must require adherence to procedures established to protect the City's investment in fuel.

Computerized reports produced from the fuel system are inaccurate, produced too late, and contribute very little to fuel control in the City. The current computerized program governing fuel operations should be suspended.

Current summary reports produced and maintained by the Supplies Department are considered inadequate for monitoring fuel transactions in the City.

The continued use of daily fuel sheets at departmental fuel sites is proper but the sheets should be revised. Monthly summaries of fuel inventory transactions should be prepared by

the Supplies Department and distributed to those City departments which control fuel sites.

A detailed statement of responsibilities for the Supplies Department and for City departments which control fuel sites is outlined in this report.

A number of fuel sites are proposed to be closed because fuel can be obtained at nearby sites, often at a lower cost due to a price differential for larger deliveries. Continued effort should now be placed on consolidating and closing more of the City's sites, (currently over 200) including Fire Department fuel sites. The proposed Materials Management Plan advocates consolidation of many current City department supply operations and optimum placement of fuel sites. Rather than wait for the implementation of that plan, the City Administrative Officer will conduct a study with a goal of reducing the number of fuel sites used by City departments to a more manageable and economical level.

With the improved control procedures at City fuel sites, suspension of the data processing of daily fuel transactions, the institution of monthly summary reports, and the closure of many fuel sites, the cost of controlling City fuel can be expected to be reduced; in addition, better control over the City's fuel may be expected. These steps represent an effort to make the present system work, and are the most logical and economical approach to follow at present. As to the future, the achieving of a common fueling system for use by all City departments in place of the now fragmented system is but one of the systems which could be more efficiently and economically managed under a General Services Department charged with operating under the Materials Management Plan. The eventual goal should be to establish a single system of sites geographically positioned to serve all users. In furtherance of achieving such a goal, all plans for construction of facilities which include fueling sites should be reviewed as to the appropriateness of the fueling site, i.e., is it needed at all, and, if so, is it sufficient to serve area rather than single user needs.

RECOMMENDATIONS

It is recommended that the Mayor:

1. a. Instruct the heads of departments that they are responsible for providing proper safeguards for fuel inventories under their control and for making spot audits to ensure that required control reports are properly maintained indicating receipts, dispersals, and fuel inventories.
- b. Instruct the Purchasing Agent, Supplies Department that he is responsible for purchasing fuel products upon order of City departments, timely processing of payments for fuel received, and prescribing control procedures and reports for use by City departments in controlling the fuel inventories.
2. Instruct the Supplies Department to:
 - a. Request the Data Service Bureau to suspend the keypunching of fuel records and other processing of the Fuel Inventory Control System (FICS) data.
 - b. Incorporate into the Department of Supplies Procedures Manual, fuel control procedures similar to those used by the Department of Public Works.
 - c. Revise DS Form 243, Daily Record of Fuel and Oil Dispensed, essentially as shown in Exhibit A, and to issue revised fuel control instructions to include:
 - Arrangement of beginning and ending meter readings to permit easier calculations of fuel metered versus fuel dispensed.
 - Provision for the receipt and transfer of fuel.
 - Provision for daily stick readings on bulk fuel tanks and meter readings.

- d. Provide to all City departments controlling fuel sites a new Monthly Fuel Inventory Report, indicating the degree of adequacy of fuel inventory control at each site.
3. Instruct the Bureau of Transportation and affected Departments to provide for inclusion of numbers for retained-from-salvage vehicles, leased equipment, and small equipment in the Transportation Equipment Cost and Maintenance System (TECAMS) master equipment list.
4. Instruct affected departments to close fuel sites as recommended in this report ; instruct the Supplies Department to discontinue ordering fuel for those sites, and instruct the responsible departments to notify their drivers to obtain fuel at other sites.
5. Instruct the Fire Department to:
 - a. Report to the Mayor for consideration in the budget the possibility of reducing the number of fueling sites used.
 - b. Maintain a record of all fuel issued by volume and vehicle number.
6. Instruct the City Administrative Officer, in cooperation with affected departments, to study the further closing of fuel sites and possible inclusion of Department of Water and Power fuel sites in the City system, in connection with the development of savings from the implementation of a General Services Department.

It is further recommended that, inasmuch as the recommendations concern administrative matters, that the Council concur in the recommendations and that thereafter the matter be received and filed.

FINDINGS

ESTABLISHING RESPONSIBILITY FOR CITY FUEL OPERATIONS

Specific responsibilities for the control of City fuel operations have not been clearly defined since fuel operations were transferred from the Bureau of Transportation to the new organizational unit formed in the Department of Supplies, the Petroleum Products Administration, on July 1, 1974. The primary reason for the transfer was to provide a timely payment procedure of overdue fuel delivery invoices. Another objective was to achieve a more centralized capability to manage the City's fuel resources during the recent fuel crisis. New payment procedures have established credibility with the vendor, however, the vendor does continue to be critical of late payment by the Police, Fire and Harbor Departments. Problems remain because of the continuance of the fuel control procedures formerly used by the Bureau of Transportation for maintenance rather than fuel control purposes. The Bureau of Transportation had a City-wide organization to administer its operations. The new Petroleum Products Administration consists of six people located in City Hall East and cannot accomplish the follow-up work necessary to obtain timely and accurate data.

Some specific steps have recently been taken to fix responsibility for fuel operations in the City. The steps taken are as follows:

1. The Supplies Department disseminated procedures for ordering fuel, receiving fuel, and the dispensing of fuel, on April 2, 1976.
2. In May, 1977, the Board of Public Works promulgated rigid procedures for control of and accounting for fuel under Board jurisdiction. These procedures cover about 80 percent of fuel purchased by the Supplies Department.
3. An Executive Directive from the Mayor, issued August 1, 1977, established responsibility for departmental fuel site operations.

The responsibilities of various City departments for controlling the City's fuel are not clearly defined or distributed throughout the City. The following list of departmental responsibilities should be distributed to those City departments that order fuel through the Supplies Department. The Supplies Department is responsible for: (See Recommendation 1b)

1. Ordering and arranging delivery of bulk petroleum products to fuel dispensing sites of designated City departments.
2. Processing timely payments of vendor invoices upon the receipt of signed receiving tickets from City departmental pump sites.
3. Maintaining summary records of fuel inventories and usage at each City fuel site, and for providing summary reports to City departments for fuel inventory and usage.
4. Prescribing records and control procedures for fuel control at City pump sites.
5. Providing instructions for specific actions required in the event of a fuel crisis.
6. Providing training and assistance as required to City fuel site personnel.
7. Performing periodic and unannounced spot audits of fuel site operations.

The responsibilities of City departments for managing and controlling fuel sites serviced by the Supplies Department are: (See Recommendation 1a)

1. Ordering and recording bulk fuel deliveries according to instructions provided by the Supplies Department.
2. Providing proper safeguards for fuel inventories under their departmental control.
3. Issuing and recording fuel issues to authorized recipients according to procedures provided by the Supplies Department.
4. Providing fuel control reports to Supplies Department as required.

The Controller is responsible for:

Auditing City departmental fuel control records during audit of City departments.

REVIEW OF DISPENSING OPTIONS, RECORDS AND OPERATIONS

Fuel Dispensing Options

In a recent publication entitled Automated Fuel Dispensing for State and Local Governments prepared by Public Technology, Inc., 1977, a range of options were detailed from which a jurisdiction can structure fuel dispensing operations. They include totally manual systems, semi-automated systems employing some manual functions, and fully automated systems. All are workable, but local need should be the major factor in choosing among the options. A discussion of the various alternatives follows:

A manual system is operated unattended and depends on the vehicle operator to do the fueling and to record the transaction. The transactions are then manually collected, audited and prepared for processing. Problems with this system are that the vehicle operator may forget to record transactions or make mistakes on the written entry. It is generally believed that data recorded by vehicle operators produces 75 percent reliability; errors occur in 25 percent of the entries.

An improved manual system utilizes fueling attendants to approve the transaction, dispense the fuel and record the data. The data is then audited and prepared for computer input. The reliability of this process transaction records is about 95 percent. At local option the fuel attendant may approve the transaction and record data, leaving the fueling up to the vehicle operator.

In semi-automated systems credit type cards may be used, one to identify the user and another to identify the vehicle. An attendant usually performs the act of operating the recording device and preparing the data for machine scanning and computer input. Some commercial stations operate remote control systems where a clerical attendant approves the fuel dispensing and receives the payment when the transaction is completed.

A fully automated system can be operated unattended for 24 hours a day. Data is recorded in a form that allows direct computer input. Fueling approval is controlled by the system and access is obtained by a coded card. Recorded data can include date, time, vehicle identification, fuel type, fuel quantity, and vehicle odometer recording (a manual entry). The reliability of the transaction data may be over 99 percent. These systems are quite expensive.

We have also reviewed the practicality of using credit cards to purchase all fuel at commercial gasoline stations. Some City fuel is purchased on credit cards now, but only where circumstances justify the usage. Widespread use of credit cards would increase City costs substantially because the price differential enjoyed through the City's master contract for purchasing fuel would no longer be available. Further, the number of individual purchases on a day-to-day, vehicle-to-vehicle basis would greatly increase the complexity of controlling and verifying purchases. Delays now occur in paying for bulk purchases of fuel. The delays anticipated in processing payments for thousands of small purchases with the attendant bureaucratic procedures would only further complicate the fuel problem.

City of Los Angeles fuel dispensing operations are primarily of the manual type where vehicle operators fuel vehicles at unattended sites and record fuel information on fuel transaction sheets. Data entries are often hard to read and considerable effort is spent by administrative and clerical personnel auditing fuel sheets for completeness of transaction data.

Some City fuel sites have attendants who either fuel vehicles and record data, or who only monitor data transactions.

After analyzing the alternative forms of fuel dispensing operations, we believe that the larger volume sites should have a person, other than the vehicle operator, present at fueling operations.

The Department of Public Works, which dispenses about 80 percent of the fuel purchased by the Supplies Department, requires a supervisor or designated representative of the supervisor to be present at peak-time fueling operations. The pump is supposed to be locked at other times.

The Public Works Department instituted procedures to improve fueling controls and record keeping at Department operated sites. A subsequent examination of the records for the last part of 1977, indicate improvement has occurred. Similar instructions should be used City-wide. (See Recommendation No. 2b)

We have discussed the use of semi-automated and automated systems. There are several factors which, at the present time, detract from the feasibility of those options for the City of Los Angeles. The cost of installing a semi-automated or automated system probably exceeds the value of fuel stolen, especially considering the large number of sites now operated in the City. Further, while properly functioning and reliable automated or mechanical devices would be beneficial in controlling access and in dispensing fuel, the systems would not prevent misappropriation of fuel, and the maintenance and repair problems which could be anticipated are also serious drawbacks.

Notwithstanding the cost and the problems involved in the automated systems, the City may at some time in the future need to install such a system. However, before deciding to spend hundreds of thousands of dollars for a system which may produce little or no better results, the City should attempt to make the current manual and largely unattended system work satisfactorily. Further, as a predecessor to installing an automated or mechanical system, or of employing fuel attendants, the number of sites in use should be systematically decreased. The concept of "department fuel sites" is a luxury which the City cannot afford to continue. Rather, achieving the concept of "city fuel sites" should now be seriously pursued. The implementation of the Material Management Plan and the formation of a General Services Department which could operate a reasonable number of fuel sites, properly located to serve all users, should achieve substantial improvements in accountability, as well as increased bulk purchasing at lower prices.

Ordering, Delivery, Receipt, Payment for Bulk Fuel

Orders for fuel are placed with the bulk fuel supplier by personnel of the Supplies Department, based on orders telephoned to Supplies by fuel site supervisors. Fuel is delivered to the individual sites. Instructions call for "sticking the tank" by the truck driver and by the fuel site supervisor, both before and after delivery of fuel to assure that the volume delivered is identical to the amount signed for as received by the fuel site supervisor. Fuel site supervisors then telephone the City Petroleum Administrator, an official in the Supplies Department, to report receipt of the delivery and to obtain a "control number" which is annotated onto the invoice for subsequent use in matching the invoice to bills. The invoice is forwarded to the Petroleum Administrator, where deliveries are recorded in a log which is an accumulation of fuel deliveries, by date, site, and the amount. The log is useful for generating statistical data.

Bills are received from the vendor by the City Petroleum Administrator and are checked against the invoices to assure that amounts and types of fuel billed are identical to that actually received. (Current gasoline prices per gallon are \$.528 for 200-399 gallon deliveries, \$.518 for 400-4999 gallons, and \$.474 for orders in excess of 5000 gallons.) The price computation for the volume delivered is verified. Minor errors, if any, are "corrected" by the City Petroleum Administrator and the Controller is requested to pay the proper or corrected amount.

Assuming the "sticking" procedures are followed by City employees to verify the actual volume received, the basic procedure is adequate to protect the City's interests. The procedure will not guarantee against the possibility of collusion nor against familiarity between drivers and recipients resulting in relaxing of procedures for verification of the volume of fuel received.

In those instances where fuel site personnel indicated some disagreement as to amount of fuel received, the variance was attributed, by site personnel, to uncertainty as to actual capacity of the fuel storage tank, uncertainty as to whether the stick was (or is) the proper one for the tank, uncertainty as to conversion tables being the right ones, or the tank not being level. No one expressed an opinion indicating any deliberate delivery of an amount less than claimed by the vendor.

Consideration should be given to periodic rotation of fuel site personnel.

Dispensing and Accounting for Fuel at City Sites

Fuel dispensing at individual sites presents an entirely different situation. Audits and subsequent newspaper publicity indicating that a large amount of fuel was unaccounted for has resulted in a tightening of controls at fuel sites in an effort to assure that all fuel dispensed is accounted for. A review of Daily Record of Fuel and Oil Dispensed, submitted by the various sites, visits to some sites, and review of a questionnaire completed by 53 site supervisors, indicated the following:

- a. Forty-one City fuel sites are attended to some degree, but only ten report staffing on a full time basis. Vehicle operators fuel their vehicles and record the receipt of fuel on forms, tablets, etc.
- b. Fuel pumps at unattended sites are generally kept locked, requiring drivers to obtain a key from an office person. The driver usually dispenses the fuel, records the transaction, and returns the key to the office.
- c. Some "Daily Record of Fuel and Oil Dispensed" forms are actually completed by office personnel, working from tablets or rough logs on which drivers receipted for fuel. This practice is explained as being necessary to achieve a clean and legible record for subsequent use by keypunch operators.
- d. Public Works Department fuel site supervisors audit the Daily Record of Fuel and Oil Dispensed to assure that all fuel dispensed during the day, according to beginning and ending meter readings for each pump, is accounted for. In two Sanitation Yards the fuel site supervisor related that discrepancies are reconciled by checking another set of records to determine which vehicles should have needed fuel but did not appear on the Daily Record of Fuel and Oil Dispensed. Although the fuel sites are open to and used by personnel from other departments, both supervisors said they were always able to reconcile their volume issued by checking with Bureau of Sanitation drivers. One can accept this if one first accepts that all users from all other departments always enter their transactions on the log sheet!

One Bureau of Standards supervised site has a technician who personally unlocks the pumps, observes the dispensing of fuel and recording of the fuel issue on the Daily Record of Fuel and Oil Dispensed, then enters the start-stop meter readings and gallons and tenths of gallons issued in a separate notebook kept in his pocket. He reconciles the two records and accounts for the fuel issuance very precisely, though he says he sometimes has to change a tenth of a gallon figure to balance one record against the other.

One Traffic Department site (Site 48), surveyed was unattended, the pumps were unlocked, and four participants in the audit, with a City car, were at the pumps examining the pump and the Daily Record of Fuel and Oil Dispensed for approximately five minutes without challenge. No one appeared to talk with the group. Usage figures indicate this 18,000 gallon capacity site dispenses 12,000 gallons a month to an average of 60 daily customers. In view of the large volume of fuel available and dispensed, the Traffic Department should, at the very least, keep the pumps locked during non-peak hours.

In general, the fuel site supervisors and attendants, where assigned seemed to be making an effort to comply with instructions for accounting for fuel. Some seem to be overcomplying to the extent that intentionally or otherwise they may be falsifying data to balance the actual versus indicated issues of fuel.

THE STATE OF ACCOUNTING FOR FUEL

The Supplies Department issued instruction on April 12, 1976 providing guidance to City Departments (not to include Fire and Police) for obtaining and dispensing fuel at City sites.

In an effort to determine the accuracy with which fuel is being accounted for, we obtained the following basic data from the Supplies Department:

Amount of Fuel on Hand, on June 30, 1977, based on stick readings.

Amount of fuel received from vendor between July 1 - December 31, 1977.

Amount of fuel dispensed according to meter.

Amount of fuel dispensed according to Daily Record of Fuel and Oil Dispensed on December 31, 1977, based on stick readings.

The information gathered was examined in two ways:

- 1) A comparison of fuel balances computed versus actual balances; and
- 2) A comparison of fuel dispensed according to pump meters versus fuel sheets.

Balances

On the first examination, an attempt was made to determine an "over or short" condition at the end of a six month period by calculating the total amount of fuel available to be dispensed (the amount on hand on July 1 plus the amount received during the six month period), less the total amount dispensed (metered), to arrive at a balance-on-hand. The balance-on-hand figure was then compared with the actual balance-on-hand figure reported from the sites as obtained by "sticking the tank". The results were as indicated on Exhibit C, which, in summary indicates that many sites allegedly issued more fuel than was available to be issued, and that many sites had less fuel on hand when the December inventory was taken than should have been if the inventory, receipts, and issue figures accurately reflected the transactions which occurred. There are substantial difference in the magnitude of the variances, for example:

- a. Site 65 is located in City Hall East. According to Exhibit C the following occurred during the last six months of 1977:

	<u>Unleaded Gasoline</u>	<u>Ethyl Gasoline</u>
Gallons on hand on July 1	5,450	4,900
Gallons received during July-December	<u>77,220</u>	<u>48,294</u>
Total gallons available to be dispensed	82,670	53,194
Gallons dispensed according to meters	<u>51,233</u>	<u>33,037</u>

	<u>Unleaded Gasoline</u>	<u>Ethyl Gasoline</u>
Remaining balance - (available minus issued)	31,437	20,157
Actual remaining balance - per stick reading inventory	4,000	4,350
Difference	(27,437)	(15,807)

The indication is that 27,437 gallons of unleaded gasoline and 15,807 gallons of ethyl gasoline available to be dispensed was not dispensed through the meter. A written record of all fuel issued is also supposed to be kept, and we compared the volume issued according to the written record with the amount reported as issued from meter readings.

	<u>Unleaded Gasoline</u>	<u>Ethyl Gasoline</u>
Metered-Gallons issued	51,233	33,037
Written-Gallons issued	51,202	33,053

The difference is insignificant. The question then remains, what happened to the fuel that was reported as purchased, was not issued according to volume reported on meters or on written records.

The Supplies Department advises that the Fire Department pump on the P-2 floor level of City Hall East pumps fuel from the same tanks as used by Site 65 (Floor P-1). Although the Fire Department does not record the issue of the fuel, the Supplies Department calculated that 39,132 gallons was used by the Fire Department. Additionally, up to 3,000 gallons was lost in the course of repairing a leak in a tank. Assuming the figures are reasonably accurate, the 43,000 gallon "shortage" is reduced to about 1,000 gallons, which amount would be an acceptable variance.

- b. Site 8, a Street Maintenance Yard in San Pedro experienced the following:

	<u>Gasoline</u>	<u>Diesel</u>
Gallons on hand on July 1	5,122	3,887
Gallons received during July-December	<u>67,881</u>	<u>10,898</u>
Total gallons available to be dispensed	73,003	14,785
Gallons dispensed according to meters	63,934	11,050
Remaining balance (available minus issued)	9,069	3,735
Actual remaining balance - per stick reading inventory	<u>4,120</u>	<u>3,460</u>
Difference	(4,949)	(275)

The indication is that 4,949 gallons of gasoline and 175 gallons of diesel fuel available to be dispensed were not dispensed through the meters. The written versus metered issue figures are as follows:

	<u>Gasoline</u>	<u>Diesel</u>
Metered-Gallons Issued	63,934	11,050
Written-Gallons Issued	65,455	10,889

The figures from metered and written records of issue are close for diesel fuel but vary significantly for gasoline, with 1,521 more gallons recorded as issued than indicated by the meter. It appears that from 3,428 to 4,949 gallons of gasoline were purchased, were not issued according to meter or written record, and are not on hand. This means that from 4.7 to 7.8 percent of the gasoline available for issue is not accounted for. Unless gasoline were removed from the tank without going through the meter or leaked out of the tank, a conclusion could be reached that it was never placed in the tank.

The 275 gallon diesel difference is not considered significant, since it is only 1.85 percent of the total available for issue.

- c. Site 25, a Street Maintenance tank truck, allegedly experienced the following:

	<u>Gasoline</u>	<u>Diesel</u>
Gallons on hand on July 1	55	398
Gallons received during July-December	<u>2,511</u>	<u>9,961</u>
Total gallons available to be dispensed	2,566	10,359
Gallons dispensed according to meters	<u>5,089</u>	<u>14,615</u>
Remaining balance (available minus issued)	(2,523)	(4,256)
Actual remaining balance - per stick reading inventory	<u>600</u>	<u>900</u>
Difference	<u>3,123</u>	<u>5,156</u>

The indication is that this truck dispensed 2,523 gallons of gasoline more and 4,256 gallons of diesel fuel more than were available to dispense. Yet, having dispensed more fuel than available, the inventory on hand was 600 gallons of gasoline and 900 gallons of diesel fuel.

Comparing the volumes reported as metered with the volumes issued on the fuel sheets, shows the following:

	<u>Gasoline</u>	<u>Diesel</u>
Metered-Gallons Issued	5,089	14,615
Written-Gallons Issued	2,543	9,675

Now the indication is that the metered figures are in error, because the amount recorded as issued on the fuel sheets is quite close to the amount available to be dispensed, with actual inventory considered.

- d. Site 16, a Street Maintenance Yard in North Hollywood, reportedly had 12,803 gallons of gasoline on hand when the calculated balance on hand would have been only

5,257 gallons. The meter readings and the written records of issue were only 221 gallons apart.

- e. Sites 57 and 58, Public Utilities and Transportation, also failed to account for all fuel available, with the figures being as follows:

	<u>Site 57</u>	<u>Site 58</u>
Gallons on hand on July 1	145	532
Gallons received during July-December	<u>8,638</u>	<u>17,860</u>
Total Gallons available to be dispensed	8,783	18,392
Gallons dispensed according to meters	7,260	10,338
Remaining Balance (available minus issued)	1,523	8,054
Actual remaining balance - per stick reading inventory	<u>459</u>	<u>891</u>
Difference	(1,064)	(7,163)

The variance of 1,064 gallons is 12.1% of the gasoline available for dispensing at Site 57, whereas the 7,163 gallons represents 38.9% of the gasoline available for dispensing at Site 58. Comparison of the amounts issued according to meter readings with the written records, indicated the following:

	<u>Site 57</u>	<u>Site 58</u>
Metered-Gallons Issued	7,260	10,338
Written-Gallons Issued	8,225	10,347

The volume issued for Site 57 varies from meter to written record, with written records indicating 965 more gallons issued than indicated by the figures for metered issues. The issues for Site 58 vary by 9 gallons between recorded and metered issues.

Although variances in excess of 1 percent should be a cause for concern, there are some possible explanations.

Apparent overage conditions may result from beginning and ending stick inventory figures not being correct, meters may have been inaccurate or out of order at times, worn meters may indicate issue of more fuel than was actually issued. Apparent shortages may also be attributed to a variety of causes, i.e., theft, inaccurate meters, inaccurate inventories.

Dispensing

The second examination was a comparison of the gallons of fuel reported as metered through the pumps to the amount of fuel recorded as used on the Daily Record of Fuel and Oil Dispensed. (See Exhibit B)

Review of the exhibit reveals so much conflicting data that no single explanation will suffice, unless that explanation is that the accounting procedures are not being accurately applied. It is also germane to point out that we have very little confidence in the validity of the figures, inventory readings, etc., used in making the comparison. It may be logical to assume that some of the gasoline shortage is due to theft. We have been advised that worn meters indicate issue of more fuel than actually left the tank. It is therefore logical to assume that some overage conditions may be due to aged meters. Overage/shortages can also occur as an effect of rounding the tenths of gallons meter readings up or down.

Because the accounting for fuel is so poorly administered, there are numerous other possible explanations. We believe that most of the problem is due to poor bookkeeping and inadequate departmental monitoring. The degree to which fuel may be misappropriated at City fuel sites may remain unknown regardless of the control systems, however the situation would be much clearer if department management made a concerted effort to require compliance with reasonable accounting and control procedures. Further, department management should institute internal controls to periodically ensure that procedures are in fact being complied with to an acceptable degree.

IMPROVING ACCOUNTABILITY AT FUEL SITES

The Fuel Inventory Control System, an automated system for accounting for fuel used by the City's various vehicles and departments and which serves as the basis for cost accounting and

management data, has reportedly been reduced to a state of near uselessness by carelessness and negligence in data gathering at the fuel sites. (See Recommendation 2a) Because a reasonably accurate accounting for the various fuels used by the City's vehicles and equipment is important to determine departmental needs, and to serve as a basis for allocation of fuel in the event of future fuel crises, it is important for department management to place personal emphasis on improving the accountability for fuel by insisting that employees carefully follow the few basic rules governing the accounting for fuel. Not only will better control over usage result, but more reliable data will be generated for use in planning for transportation needs.

The improvements suggested are in three basic categories: improving records and procedures; improving vehicle inventory listings; limiting hours of operation of sites.

Modification of Records and Procedures

In an effort to tighten accounting procedures, pinpoint responsibility, and to quickly detect unauthorized use of City fuel, the Supplies Department should amend the Supplies Procedures Manual and the Daily Record of Fuel and Oil Dispensed (Form DS243) to include information leading to a daily balance of fuel inventories. (See Exhibit A for a suggested form). The intent of the suggested changes is to insure that site personnel will know how much fuel is on hand in the morning, how much was issued during the day, how much was on hand at the end of the day; to improve recording and collecting of information needed for preparing a periodic summary of fuel usage and to provide an auditable accounting record at each site. Essentially, the following changes should be made: (See Recommendation 2b and 2c)

- a. All entries on the Daily Record of Fuel and Oil Dispensed should be made neatly, in ink, and at the time the fuel is dispensed.
- b. The Forms DS243 should be used in serial number sequence; forms voided for any reason should be retained in file, in sequence.
- c. Daily "sticking of tank" readings should be taken and recorded, at opening and closing of the operations.

- d. The daily opening meter reading should be recorded.
- e. The daily closing meter reading should be recorded.
- f. The number of gallons received and dispensed should be recorded.
- g. At the close of business the DS243 should be closed out by an entry on the next blank line following the last issue entry, as follow:

"//// Last Item ////"

- h. A reconciliation of the daily transactions, with an explanation to be made in writing, when the volume of fuel recorded as dispensed varies from the amount issued by one percent or more.

A monthly report summarizing overall fuel site inventory accountability and indicating fuel inventory, fuel received and fuel dispensed should be prepared and distributed by the Petroleum Products Administrator to City departments controlling fuel sites. (See Exhibit D) (See Recommendation 2d)

Recording Issue of Fuel for Off-Road Use

Fuel for use in lawn mowers, generators, chain saws, edgers, and other auxiliary and non-vehicular equipment is currently accounted for in a variety of ways.

Recreation and Parks sites have a single number assigned which is used for recording of fuel issued to such equipment, whether issued directly into the equipment or into five gallon cans for refueling of the equipment.

Public Works sites issue gasoline in five gallon cans for use in small equipment but charge the issue to the vehicle number used to pick up the fuel.

Some other sites log the issue of fuel to "five gallon can" or "mower".

To achieve a standard procedure and to facilitate accounting for fuel used for off-road purposes (exempt from State tax) the Supplies Department should assign a number(s) to be used

when accounting for issuance of fuel for off-road usage. (See Recommendation 3)

Inclusion of All Vehicles in Master Inventory

In addition to the problems in recording off-road use of fuel, it was determined that many vehicles using fuel are not included in the City's inventory. The Department of Recreation and Parks and the Department of Public Works have leased numerous vehicles for use in connection with CETA projects and the Department of Recreation and Parks has obtained a large number of former Department of Water and Power vehicles from salvage. Vehicles in those two categories are not accounted for on the City's inventory records. Because identification numbers acceptable to the TECAMS system were not assigned to those vehicles, entries on the Daily Record of Fuel and Oil Dispensed to those vehicles are rejected by the computer and counted in the report in a miscellaneous category. This is likely to be the explanation for much of the allegedly unaccounted for gasoline.

Regardless of the future status of the Fuel Inventory Control System, City procedures should require departmental inventories to include all vehicles on hand, with a special numeric or alpha identifier for leased vehicles so that fuel used in those vehicles can, where appropriate, be aggregated for charging against grant programs, so that "salvaged" vehicles will be identifiable in the inventory, and so that fuel can be specifically accounted for rather than being classed as unaccounted for. (See Recommendation 3)

Limiting Hours of Operation

Departments responsible for operating fuel sites should establish limited "open" hours for either the beginning or ending of the day so that most users can fuel their vehicles during that period and where possible, an attendant should be assigned. Except for those "open" hours the fuel site should be closed, pumps locked, and fuel should be available only by a person obtaining access from the fuel site supervisor. The "open hours" and the procedure for obtaining fuel at other hours should be made known to using departments and using departments should instruct their drivers to conform to the "open hours" schedule.

FUEL SITES RECOMMENDED FOR CLOSURE

There are 81 storage and dispensing sites operating under the general functional supervision of the Supplies Department, of which many do a very low volume business.

It appears that departmental autonomy or proprietary interests resulted in there being so many sites, some of which are located within a one City block distance of another. Convenience, differing work schedules, inexpensive fuel, ignorance of existing site locations, may have contributed to the topsy turvy proliferation of fuel sites. Now that fuel has greatly increased in price, has been and may again be scarce, and has taken on a new importance it is more attractive to theft and misuse. This attractiveness calls for a higher priority to be placed on control.

Controls have been tightened, and could be tightened more, all at an expense to the City. While the possibility of automated or mechanical access controls or use of attendants has not been ruled out, such installations are expensive and may actually cost more than the loss suffered through lesser controls.

Notwithstanding the problem of achieving a high level of control through access and accounting controls, the opportunity for misuse of fuel can be reduced by reducing the number of sites; both the soft and hard costs to the City could be reduced by closing as many of the smaller sites as possible without significantly inconveniencing the users.

All of the sites involve some soft costs, the elimination of which result in time savings, but which would not lead to budgetary reductions. These costs include ordering fuel, monitoring pumps, locking and unlocking pumps and are incurred by employees who were hired to do other work. Even the small sites involve such work, and in at least one case the person doing the work is in a civil service class with a salary of \$25,000 a year. Because normal usage of vehicles result in the vehicles going by or near to other sites, we anticipate no substantial additional costs to be incurred for travel as the result of closing numerous small volume sites.

The City is currently purchasing fuel on a price schedule which provides gasoline at \$.528 per gallon for single deliveries of 200-399 gallons, \$.518 for single deliveries of 400-4999 gallons; and \$.474 per gallon for fuel delivered in 5000+ gallon volumes. The savings available by purchasing in 5000+ volumes is 4.4 cents per gallon over the next smaller order price, a significant savings. Users of the low volume sites could in many cases obtain fuel at larger sites, where the City realizes a savings on bulk purchases.

Among the sites which we believe should be closed are five operated by the Animal Regulation Department:

- a. Site 41, located at 13131 Sherman Way, North Hollywood. This 2,000 gallon capacity site dispenses about 1,150 gallons of unleaded fuel per month. A nearby site which could serve current users is Site 17, a Street Maintenance site at 12251 Sherman Way which has a large tank capacity and receives unleaded fuel at the lowest price available to the City. It presently pumps 8,600 gallons of gasoline and 3,500 gallons of diesel a month. The savings of 4.4 cents per gallon on 13,800 gallons per year would be \$607.
- b. Site 42, located at 3612 Eleventh Avenue in South Central Los Angeles, is a 550 gallon capacity site which pumps an estimated 1,200 gallons of unleaded fuel per month to an average of 10 customers per day. A nearby location from which gasoline could be obtained is Site 53 located at 3315 Exposition Boulevard, a Bureau of Transportation site which has three tanks for unleaded fuel, totaling 3,350 gallon capacity. Site 53 serves an estimated 25 vehicles per day and has an attendant on duty. Additionally, Site 51 at 2801 Exposition Boulevard might be used. Site 51 is a Traffic site, has a 15,000 gallon unleaded fuel capacity. If the 14,400 gallons of fuel used by Site 42 were purchased at Site 51, the 4.4 cents per gallon savings would save the City \$634 per year.
- c. Site 43, 735 Battery Street, San Pedro. This 550 gallon capacity site pumps an estimated 740 gallons of unleaded fuel per month, serving an average of 4 customers per day. A nearby site which could provide fuel is Site 8, a Street Maintenance Yard at 1400 N. Gaffey Street which has 10,000 gallon capacity tanks, serves 61 vehicles per day, dispenses 10,500 gallons of gasoline and 1,200 gallons of diesel per

month. The 4.4 cents savings from buying the 5,640 gallons of gasoline used by Animal Regulation at this site would amount to \$248 per year.

- d. Site 44, 11950 Missouri Avenue, West Los Angeles. This 550 gallon capacity site pumps an estimated 1,350 gallons of fuel per month serving an average of 5 customers per day. Fuel could be obtained at the nearby Site 29, a Street Maintenance Yard located at 11165 Missouri Avenue in West Los Angeles, which has a 10,000 gallon capacity tank, and pumps 7,000 gallons of gasoline per month. A 4.4 cents per gallon savings on 16,200 gallons would save \$713 per year.
- e. Site 111, located at 20655 Plummer Street in Chatsworth. This 4,000 gallon capacity site pumps an average of 1,600 gallons of unleaded fuel per month. The nearest large site is #24, the Northridge Street Maintenance Yard at 8820 Van Alden Avenue, which has a 10,000 gallon unleaded gas tank. Purchase of 19,200 gallons per year at a 4.4 cents per gallon savings would save \$845 per year.

While Animal Regulation personnel work weekends and evenings, and the alternate sites for fueling listed above are not open then, it should usually be sufficient to fuel vehicles late in the day on Fridays or if absolutely necessary a credit card could be used in emergency situations. The Animal Regulation Department does have gasoline credit cards. Closing of the five sites would result in an estimated \$3,047.00 annual savings on purchase of an estimated 69,240 gallons of fuel, with a 4.4 cents per gallon pricing differential. In addition it would relieve the Department of monitoring the small sites, and would better utilize the capabilities of the larger sites.

Other sites which should be considered for closing are as follows:

- a. Site 2, a Street Maintenance site at 1479 Stoner Avenue, West Los Angeles, has two 1,000 gallon unleaded and one 550 gallon diesel tanks. The site dispenses 5,257 gallons of gasoline and 418 gallons of diesel fuel per month. If Site 29, located at 11165 Missouri Avenue, West Los Angeles, were used, the 4.4 cents a gallon saved on the purchase of 63,000 gallons of gasoline per year would save \$2,772 per year.

- b. Site 7, Bureau of Street Maintenance, located at 3311 Thatcher Avenue in Venice. This site has a 550 gallon unleaded fuel and a 550 gallon diesel fuel tank. About 525 gallons of unleaded and 300 gallons of diesel fuel are pumped per month, serving an average of 8 customers per day. The site is not close to a larger volume site, however it is close enough to the Site 15, a Street Maintenance Yard located at 2000 Washington Boulevard, Venice, to obtain fuel. The Site 15 has a 2000 gallon capacity for unleaded fuel, pumps an average of 6,012 gallons per month, has a 1000 gallon diesel tank and pumps 245 gallons per month and could absorb the additional workload of serving the current users of Site 7.
- c. Site 19, Street Maintenance Bureau, 1451 E. 6th Street, has a 1,000 gallon unleaded tank, a 550 gallon diesel fuel tank, and a 280 gallon kerosene tank. During the period July 1-December 31, 1977, the site pumped 1,459 gallons of gasoline, an estimated 20 gallons of diesel and 20 gallons of kerosene per month, servicing an estimated 35 vehicles per day. Site 1, a Street Maintenance warehouse located at 222 E. 7th Street, has two 1,500 gallon gasoline, and one 1,000 gallon diesel and one 550 gallon kerosene tank, serves about 30 vehicles per day, and could serve as a fuel site for those vehicles now using Site 19. A savings on purchase price would not occur as the limited tank capacity at Site 1 precludes large volume deliveries.
- d. Site 45, Library Department, located at 630 W. 5th Street, is a 1,000 gallon capacity unleaded fuel site. The site dispenses an average of 345 gallons per month, serving 3 customers per day. The City Hall Garage, Site 40, or City Hall East Garage, Site 65, could serve the additional three vehicles per day. Purchase of 4,150 gallons of gasoline per year at the 4.4 cents savings which could be realized would save \$183 a year.
- e. Site 46, Public Buildings, 361 Anderson Street, has one 1,000 gallon gasoline tank, dispenses about 1,500 gallons per month and serves 11 vehicles per day. Site 47, Bureau of Engineering, 461 N. Alameda, is currently a low volume site pumping about 1,400 gallons a month to eight vehicles, per day, but has a 12,000 gallon capacity tank. If the 18,000 gallons per year pumped at Site 46 were purchased at 4.4

cents per gallon less than the lower volume cost, it would save the City \$792.

- f. Site 49, Traffic Department, located at 430 Commercial Street, is a 3,000 gallon capacity unleaded fuel site. This site dispensed an average of 890 gallons per month, during July-December, 1977. Three deliveries (1,525, 2,000, 1,690 gallons) were received. Site 47, an Engineering site at 461 N. Alameda Street, has a 12,000 gallon tank, now serves 8 vehicles per day, and could serve the five vehicles served by Site 49. Purchase of the 10,680 gallons used by Site 49 at the 4.4 cents per gallon savings which could be realized at Site 47, would save the City \$470 per year.
- g. Site 56, Bureau of Standards, located at 2319 Dorris Place, is a 550 gallon capacity unleaded fuel site. The site, dispenses an average of 1830 gallons per month, serving 15 customers per day. Site 70, a Sanitation Bureau site at 2335 Dorris Place, is a larger site, having three tanks, pumps 4,300 gallons per month, serving 22 customers per day and could provide service to customers now served by Site 56.
- h. Site 71, a Sanitation Bureau site located at 11168 Missouri in West Los Angeles, has a 2,000 gallon unleaded fuel capacity, pumps 1,340 gallons per month, serving seven vehicles per day. Site 29, a Street Maintenance Yard located at 11165 Missouri Avenue has a 10,000 gallon unleaded fuel tank and could serve the Site 71 customers. The 4.4 cents per gallon saved on purchase of 16,080 gallons of fuel per year would amount to \$708 per year.
- i. Site 72, a Sanitation Bureau site located at 3233 Thatcher Avenue, Venice, has a 1,000 gallon unleaded fuel tank capacity, pumps 1,053 gallons per month and serves five vehicles per day. Site 15, a Street Maintenance Yard located at 2000 Washington Boulevard has a 2,000 gallon unleaded fuel tank, dispenses 6,000 gallons per month, and could accommodate the vehicles served by Site 72. There would be no savings on pricing because Site 15's tank is not large enough to receive volume deliveries. Site 5's usage may justify installation of a larger capacity tank.
- j. Site 75, Bureau of Sanitation, 18560 Oxnard Street, Reseda, has one 1,000 gallon tank for unleaded fuel, pumps an estimated 1,925 gallons per month, serving 10 vehicles per

day. As an alternative, Site 9, a Street Maintenance yard at 6015 Baird Avenue in Tarzana has three tanks for unleaded gasoline, a 10,000 gallon, a 550 gallon and a 1,500 gallon tank. If 23,100 gallons of fuel for the Bureau of Sanitation were purchased at the 4.4 cents per gallon savings available in large volume orders, the City would realize a savings of \$1,012 per year.

- k. Site 76, Bureau of Sanitation, Hollywood District, 6014 Waring Avenue, has a 2,000 gallon tank for unleaded fuel, pumps an estimated 1,050 gallons per month, serving 6 vehicles per day. Site 4, a Street Maintenance Yard located at 6640 Romaine Street in Hollywood, has a 10,000 and a 2,000 gallon tank for unleaded fuel, serves 35 vehicles per day, and could serve the current users of Site 76. Purchase of the 12,600 gallons of fuel used by Site 76 at the 4.4 cents per gallon savings would save the City \$554 per year. (See Recommendation 4)

Consolidation of Fuel Sites

It is costing the City more to operate its 200 plus fuel sites, including Police and Fire fuel sites, because of the practice of not purchasing bulk fuel in optimum priced single purchases of over 5,000 gallons or more. Many of the City's fuel sites have tank capacities of less than 5,000 gallons.

In 1976, only four of the 96 fuel sites then administered by the Supplies Department had a fuel capacity of 10,000 gallons or more. Eighteen 10,000 gallon storage tanks were installed at high volume usage sites. The City will save approximately \$133,000 by buying the lower priced fuel in deliveries of over 5,000 gallons. This Audit recommends closing 16 current sites, for a savings of approximately \$9,500 on gasoline purchases and approximately \$23,500 in costs for site operations.

Combining of departmental fuel sites could and should be considered in the forthcoming consolidation of materials management operations. The City's Materials Management plan calls for the elimination of departmental owned material supplies, except for special items, and consolidating department material into regional warehouse facilities which are to be operated by the Supplies Department. The consolidation of the 200 plus fuel sites in the City should achieve lower operating costs through the consolidation of orders, reduced warehousing

operations, and at a reduced investment and inventory. The initial implementation of this plan is considered for the fiscal year 1977-78.

It is obvious that the current situation should not be permitted to continue until the Materials Management Plan is fully implemented. Therefore it is recommended (No.6) that the City Administrative Officer conduct a review of all sites now in operation to arrive at a recommendation for drastically reducing and consolidating the number of sites and to maximize bulk purchase of fuel at lower costs.

ESTIMATED ANNUAL DIRECT COST SAVINGS

The annual direct cost savings which may be attained through adoption and implementation of this preliminary audit report is as indicated below.

1.	Close 16 Departmental Fuel Sites	\$33,000
2.	Reduce Petroleum Products Administration staffing (6 to 4 people)	35,000
3.	Suspend Automated Fuel Inventory Control System	<u>26,000</u>
	Savings	\$94,000

Fire and Police Fueling Operation

Fire

The Fire Department has 104 fuel dispensing sites, one located at each fire station. With few exceptions, the tanks at the sites are 550 gallon capacity; most contain diesel fuel for fire apparatus; some contain gasoline for automobiles. As noted in the recent Controller's audit of the Fire Department, and during this Audit, the Fire Department does not record the issue of fuel.

In general, the volume of usage is low and fuel must be purchased in small quantities for which a premium price per gallon is paid. Consolidation of Fire Department fueling sites should be explored by the Fire Department. Savings can be achieved through reducing the number of sites and increasing the size of tanks sufficiently to permit purchase of fuel in large quantities at minimum price. Another option might be to consider

fueling of Fire Department vehicles at Public Works sites, where such sites are located nearby. The Fire Department has a potential for promoting City-wide economies by using City rather than only Fire Department sites. Finally, the inclusion of fuel tanks at new fire stations should not be a standard feature. (See Recommendation 5)

Police

The Police Department operates 22 fueling sites, 17 of which are at geographical divisions, and which provide fuel to the black and white and plain cars, trucks, etc. The sites are attended and dispense large volumes of fuel. Because of the usage of these sites almost entirely by police officers, the security provided by sites being located within police facilities, the familiarity of police personnel with accurate record keeping, and the use of attendants, the sites and the system operate satisfactorily. Some usage of these sites by other departments does occur.

Department of Water and Power

The Department of Water and Power operates 33 fuel sites in the metropolitan area, ranging from 500 to 30,000 gallons in capacity.

The possibility of incorporating these fuel sites into a future comprehensive fuel system should be given serious consideration. Although cross-billing might be necessary, the benefits which could result from a common system should be substantial.

In coordination with the development of savings estimates from anticipation of implementation of a General Services Department and a Materials Management Plan, the City Administrative Officer will review the arrangement used by the Department of Water and Power with a view toward including services for the Department of Water and Power in a small network of fuel sites geographically located to serve all City users.

NO.
DATE

LOCATION NO.		LOCATION NAME AND DEPARTMENT				SITE SUPERVISOR	
TANK NO	TYPE FUEL	BEGINNING STICK READING	BEGINNING PUMP METER READINGS:		PUMP NO. 1	PUMP NO. 2	
EQUIPMENT NO.	ASSIGNED DEPT/BUR	RECEIVED BY (PRINT NAME)	FUEL GALS. 10	PUMP 1 READING	PUMP 2 READING	QTS. OIL	MISC. (SPECIFY)
		TOTALS					

SUMMARIES:

DELIVERY	PUMPS	1	2	TANK
CONTROL NO. _____	METER READINGS			BEGINNING STICK
GALS. DELVRD. _____	DAY/SHIFT END _____			READING _____
STICK READING:	BEGIN _____			GALS. PUMPED _____
BEFORE DEL. _____	TOTAL GALS. DISPENSED _____			GALS. DELVRD. _____
AFTER DEL. _____	TOTAL GALS. DISPENSED _____			END STICK _____
RECEIVED BY: _____	PUMPS 1 & 2 _____			READING _____
				VARIANCE _____
				EXHIBIT A

COMPARISON OF FUEL METERED WITH FUEL RECORDED AS ISSUED

EXHIBIT B

Site	Gas/Gallons		Variance	%	Diesel/Gallons		Variance	%
	Metered	Recorded			Metered	Recorded		
<u>Street Maintenance</u>								
1	49,296	48,762	(534)	(1.1)	3,260	2,929	(331)	(10.2)
2	32,116	31,541	(575)	(1.8)	2,531	2,508	(23)	(.91)
3	22,531	22,375	(156)	(.62)	692	721	29	4.2
4	55,689	55,753	64	.11	2,269	2,619	350	15.4
5	79,533	81,008	1,475	1.85	9,207	8,942	(265)	(2.9)
6	32,614	32,606	(8)		3,085	2,932	(153)	(4.9)
7	1,629	1,605	(24)	(1.5)	701	455	(246)	(35.1)
8	63,934	65,455	1,521	(2.4)	11,050	10,889	(162)	(1.46)
9	44,944	47,983	3,039	6.9	4,484	4,895	411	9.2
10	75,692	75,474	(218)	(.29)	4,140	4,043	(97)	(2.3)
11	17,654	17,356	(298)	(1.7)	1,734	1,866	132	7.6
12	34,517	33,599	(918)	(2.66)	7,295	7,229	(66)	(.90)
13	12,729	12,828	99	.77	1,139	1,143	4	.35
14	33,111	33,127	16	.05	1,841	1,773	(68)	(3.7)
15	36,466	36,070	(396)	1.9	1,512	1,472	(40)	(2.6)
16	59,141	58,920	(221)	.37	3,481	3,415	66	1.9
17	41,992	51,352	9,360	22.3	21,524	21,113	(411)	(1.9)
18	117,319	119,510	2,191	1.87	5,017	5,432	415	8.3
19	8,736	8,755	19	.22	75	25	(50)	(66.6)
20	38,482	37,380	(1,102)	(2.86)	2,044	1,973	(71)	(3.5)
22	18,271	19,231	960	5.2	2,354	2,282	(72)	(3.0)
23	28,416	29,105	689	2.4	29,636	30,232	596	2.0
24	55,841	55,476	(365)	(.65)	3,445	4,144	699	20.3
*25	5,089	2,543	(2,546)	(50.0)	14,615	9,675	(4,940)	(33.8)
*26	6,297	4,521	(1,776)	(28.2)	15,963	16,777	814	5.1
*27	2,496	3,632	1,136	45.5	15,286	13,848	(1,438)	(9.4)

* Tank Trucks

<u>Site</u>	<u>Gas/Gallons</u>		<u>Variance</u>	<u>%</u>	<u>Diesel/Gallons</u>		<u>Variance</u>	<u>%</u>
	<u>Metered</u>	<u>Recorded</u>			<u>Metered</u>	<u>Recorded</u>		
<u>Street Maintenance (Continued)</u>								
28	29,303	28,870	(433)	(1.48)	4,183	3,984	(199)	(4.8)
29	43,111	42,422	(689)	(1.60)	4,226	4,062	(164)	(3.8)
30	14,285	14,482	197	1.38	6,603	6,513	(90)	(1.4)
	<u>1,061,234</u>	<u>1,071,741</u>	<u>(10,259)</u>	<u>(1.0)</u>	<u>183,392</u>	<u>177,891</u>	<u>(8,886)</u>	<u>(4.8)</u>
			<u>20,766</u>	<u>1.95</u>			<u>3,516</u>	<u>1.9</u>
			<u>10,507</u>	<u>.99</u>			<u>5,370</u>	<u>2.9</u>

Sanitation Sites

31					36,499	37,235	736	2.0
34	64,703	63,410	(1,293)	(1.99)	144,757	148,411	3,654	2.5
35	29,413	30,650	1,237	4.20				
36					157,200	154,802	(2,398)	(1.53)
39					172,975	174,597	1,622	9.4
70	25,367	25,818	451	1.77				
	<u>119,483</u>	<u>119,878</u>	<u>(1,293)</u>	<u>(1.08)</u>	<u>511,431</u>	<u>515,045</u>	<u>(2,398)</u>	<u>(.47)</u>
			<u>1,688</u>	<u>1.41</u>			<u>6,012</u>	<u>1.17</u>
			<u>395</u>	<u>.33</u>			<u>3,614</u>	<u>.70</u>

Transportation

32					27,231	27,115	(116)	(.42)
38	4,767	5,256	489	10.26	40,425	37,322	(3,103)	(7.7)
40	47,253	46,835	(418)	(.88)				
	35,806	35,673	(133)	(.37)				
53	27,722	27,853	131	.47				
54	77,876	78,655	779	1.00				
65	51,233	51,202	(31)	(.07)				
	33,037	33,053	16	.05				
77	17,939	17,521	(418)	(2.3)				
	<u>295,633</u>	<u>296,649</u>	<u>(1,000)</u>	<u>(.14)</u>	<u>67,656</u>	<u>64,437</u>	<u>(3,219)</u>	<u>(4.8)</u>
			<u>1,415</u>					
			<u>408</u>					

<u>Site</u>	<u>Gas/Gallons</u>		<u>Variance</u>	<u>%</u>	<u>Diesel/Gallons</u>		<u>Variance</u>	<u>%</u>
	<u>Metered</u>	<u>Recorded</u>			<u>Metered</u>	<u>Recorded</u>		
<u>Public Buildings</u>								
46	9,245	9,143	(102)	1.10				
<u>Bureau of Engineering</u>								
47	8,406	8,273	(133)	(1.58)				
<u>Bureau of Street Lighting</u>								
55	25,161	25,081	(80)	(.32)				
<u>Department of Animal Regulation</u>								
41	7,069	6,931	(138)	(1.9)				
42	9,146	7,228	(1,918)	(21.0)				
43	2,979	2,777	(202)	(6.8)				
44	7,658	8,081	423	5.5				
111	10,021	9,668	(353)	3.5				
	<u>36,873</u>	<u>34,685</u>	<u>(2,611)</u>	<u>(7.1)</u>				
			423	1.1				
			<u>(2,188)</u>	<u>(5.9)</u>				
<u>Library Department</u>								
45	2,081	2,081	--	--				
<u>Public Utilities and Transportation</u>								
57	7,260	8,225	965	13.3				
58	10,338	10,347	9	--				
59	203	216	13	6.4				
	<u>17,801</u>	<u>18,788</u>	<u>987</u>	<u>5.5</u>				

Site	Gas/Gallons		Variance	%	Diesel/Gallons		Variance	%
	Metered	Recorded			Metered	Recorded		
<u>Recreation and Parks Department</u>								
80	156,571	160,092	3,521	2.25	19,276	15,876	(3,350)	
81	3,081	2,937	(144)	(4.6)				
82	19,937	20,881	944	4.7				
83	20,027	19,905	(122)	.60				
84	7,287	7,594	307	4.2				
85	3,881	3,125	(756)	(19.5)				
86	47,913	50,106	2,193	4.6	1,756	2,233	477	
87	9,556	9,699	133	1.4				
88	12,083	12,398	315	2.6				
89	14,141	14,196	55	.39				
91	5,937	5,947	10	.16				
92	4,829	4,578	(251)	(5.2)				
93	12,183	12,134	(49)	(.40)				
94	3,616	3,269	(347)	(9.6)				
97	4,054	3,355	(699)	(12.2)				
104*	19,164	20,030	866	4.5				
	<u>344,270</u>	<u>350,246</u>	<u>(2,368)</u>	<u>(.68)</u>	<u>20,982</u>	<u>18,109</u>	<u>(3,350)</u>	<u>16.0</u>
			8,344	2.42			477	2.3
			<u>5,976</u>	<u>1.74</u>			<u>(2,873)</u>	<u>(13.7)</u>

*Meter readings not available for Sites 98, 99, 101, 102

INVENTORY, RECEIPTS, ISSUES, INVENTORY (In Gallons)
June 30 - December 31, 1977

Responsible Department/STREET MAINTENANCE

	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>
Site Number	#1		#2		#3	
Inventory	1,421	101	811	26	291	319
Gallons Received	49,915	3,511	32,767	2,845	23,552	700
Total Available	51,336	3,612	33,578	2,871	23,843	1,019
Gallons Dispensed through						
Meter	(49,296)	(3,260)	(32,116)	(2,531)	(22,531)	(692)
Derived Balance	2,040	352	1,462	340	1,312	327
Inventory	1,801	638	NA	NA	1,368	334
Variance	(239)	286			56	7
Site Number	#4		#5		#6	
Inventory	5,638	230	811	26	990	280
Gallons Received	55,994	2,411	81,339	11,192	31,860	2,735
Total Available	61,632	2,641	82,150	11,218	32,850	3,015
Gallons Dispensed through						
Meter	(55,689)	(2,269)	(79,533)	(9,207)	(32,614)	(3,085)
Derived Balance	5,943	372	2,617	2,011	236	(70)
Inventory	5,980	430	9,607	8,539	272	90
Variance	37	58	6,990	6,528	36	20
Site Number	#7		#8		#9	
Inventory	40	25	5,122	3,887	8,313	747
Gallons Received	1,480	620	67,881	10,889	48,597	4,915
Total Available	1,520	645	73,003	14,776	56,910	5,662
Gallons Dispensed through						
Meter	(1,629)	(701)	(63,934)	(11,050)	(44,944)	(4,484)
Derived Balance	(109)	(56)	9,069	3,726	11,966	1,178
Inventory	180	200	4,120	3,460	9,319	818
Variance	289	256	(4,949)	(266)	(2,647)	(360)
Site Number	#10		#11		#12	
Inventory	8,019	1,683			4,700	1,080
Gallons Received	72,240	3,434	16,748	--	36,107	7,410
Total Available	80,259	5,117			40,807	8,490
Gallons Dispensed through						
Meter	(75,692)	(4,140)	(17,654)	(1,734)	(34,517)	(7,295)
Derived Balance	4,567	977			6,290	1,195
Inventory	Unk	Unk	3,715	274	7,721	1,193
Variance					(1,431)	2

Exhibit C

	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>
Site Number		#13	#14		#15	
Inventory	526	158	713	90	678	1,014
Gallons Received	12,336	1,049	32,914	2,123	36,606	700
Total Available	12,862	1,207	33,627	2,213	37,284	1,714
Gallons Dispensed through						
Meter	(12,729)	(1,139)	(33,111)	(1,841)	(36,466)	(1,512)
Derived Balance	133	68	516	370	818	202
Inventory	159	135	1,100	550	1,800	270
Variance	26	67	484	180	982	68
Site Number		#16	#17		#18	
Inventory	8,361	3,055	3,370	850	6,139	144
Gallons Received	56,037	1,974	48,559	25,718	118,042	4,776
Total Available	64,398	5,029	51,929	26,568	119,903	4,920
Gallons Dispensed through						
Meter	(59,141)	(3,481)	(41,992)	(21,524)	(117,319)	(5,017)
Derived Balance	5,257	1,548	9,937	5,044	2,584	(97)
Inventory	12,803	2,002	NA	NA	6,530	218
Variance	7,546	454			3,946	315
Site Number		#19	#20		#22	
Inventory	877	260	389	40	285	--
Gallons Received	7,814	--	38,945	2,413	18,515	1,850
Total Available	8,691	260	39,334	2,453	18,800	--
Gallons Dispensed through						
Meter	(8,736)	(75)	(38,482)	(2,044)	(18,271)	(2,354)
Derived Balance	(45)	185	852	409	529	--
Inventory	338	237	803	430	532	428
Variance	383	42	(49)	21	(3)	--
Site Number		#23	#24		#25	
Inventory	1,600	4,500	3,096	473	55	398
Gallons Received	27,380	28,618	57,633	4,251	2,511	9,961
Total Available	28,980	33,118	60,729	4,724	2,566	10,359
Gallons Dispensed through						
Meter	(28,416)	(29,636)	(55,841)	(3,455)	(5,089)	(14,615)
Derived Balance	564	3,482	4,888	1,279	(2,523)	(4,256)
Inventory	1,000	975	5,397	1,245	600	900
Variance	436	(2,507)	509	(34)	(3,123)	(5,156)
Site Number		#26	#27		#28	
Inventory	336	590	583	450	300	190
Gallons Received	5,225	17,791	2,841	16,291	29,187	4,252
Total Available	5,561	18,381	3,424	16,741	29,487	4,442
Gallons Dispensed through						
Meter	(6,297)	(15,963)	(2,496)	(15,286)	(29,303)	(4,183)
Derived Balance	(736)	2,418	928	1,455	184	259
Inventory	463	291	700	1,000	480	350
Variance	1,199	(2,127)	(228)	(455)	(296)	91

	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>
Site Number		#29		#30		
Inventory	3,003	654	1,929	834		
Gallons Received	49,496	3,880	14,495	6,300		
Total Available	52,499	4,534	16,424	7,134		
Gallons Dispensed through						
Meter	(43,111)	(4,226)	(14,285)	(6,603)		
Derived Balance	9,388	308	2,139	531		
Inventory	9,604	338	--	--		
Variance	216	30	--	--		

Responsible Department/SANITATION

Site Number	#31		#34		#35	
	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>	
Inventory	4,866	8,376	10,800	4,100	3,100	
Gallons Received	36,177	60,563	144,069	27,725	188,490	
Total Available	41,043	68,939	154,869	28,825	191,590	
Gallons Dispensed through						
Meter	(36,499)	(64,703)	(144,757)	(29,413)	--	
Derived Balance	4,544	4,236	10,112	(588)	--	
Inventory	5,158	3,350	7,127	1,500	5,000	
Variance	614	(886)	(2,985)	2,088	--	

Site Number	#36	#39	#70	#71	#72	#73
	<u>Diesel</u>	<u>Diesel</u>	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>
Inventory	6,512	4,413	700	1,381	209	73
Gallons Received	152,647	177,934	25,634	7,730	6,471	12,999
Total Available	159,159	182,347	26,334	9,111	6,680	13,078
Gallons Dispensed through						
Meter	(157,200)	(172,975)	25,367	8,027	5,921	12,407
Derived Balance	1,959	9,372	967	1,084	759	665
Inventory	--	--	1,400	936	--	--
Variance			433	(148)		

Site Number	#74	#75	#76
	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>
Inventory	400	782	1,492
Gallons Received	10,981	11,664	5,450
Total Available	11,381	12,446	6,942
Gallons Dispensed through			
Meter	10,946	11,631	6,204
Derived Balance	435	815	723
Inventory	650	--	662
Variance	215		(76)

Responsible Department/TRANSPORTATION

Site Number	#32	#33		#38	#40	
	<u>Diesel</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Gas</u>
Inventory	1,459	9,296	739	2,422	3,919	1,212
Gallons Received	29,177	168,375	4,710	40,757	48,204	40,905
Total Available	30,636	177,671	5,449	43,179	52,123	42,117
Gallons Dispensed through						
Meter	(27,231)	—	(4,767)	(40,425)	(47,253)	(35,806)
Derived Balance	3,405		682	2,754	4,870	6,311
Inventory	3,689	11,234	812	3,346	5,530	6,654
Variance	284		(130)	(592)	(660)	(343)

Site Number	#53	#54		#65	#77	
	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>	
Inventory	2,348	8,254	5,450	4,900	—	
Gallons Received	28,703	74,681	77,220	48,294	18,530	
Total Available	31,051	82,935	82,670	53,194	18,530	
Gallons Dispensed through						
Meter	27,722	77,876	51,202	33,053	17,939	
Derived Balance	3,329	5,059	31,468	20,141	591	
Inventory	3,246	5,109	4,000	4,350	1,250	
Variance	(83)	(50)	(27,468)	(15,791)	(659)	

Responsible Department/PUBLIC BUILDINGS

Site Number	#46	
	<u>Gas</u>	
Inventory	625	
Gallons Received	8,986	
Total Available	9,611	
Gallons Dispensed through		
Meter	(9,245)	
Derived Balance	366	
Inventory	587	
Variance	(221)	

Responsible Department/ENGINEERING

Site Number	#47	
	<u>Gas</u>	
Inventory	8,453	
Gallons Received	7,296	
Total Available	15,749	
Gallons Dispensed through		
Meter	(8,406)	
Derived Balance	7,343	
Inventory	7,282	
Variance	(61)	

Responsible Department/STREET LIGHTING

Site Number	#55
	<u>Gas</u>
Inventory	3,230
Gallons Received	23,509
Total Available	<u>26,739</u>
Gallons Dispensed through	
Meter	25,161
Derived Balance	<u>1,578</u>
Inventory	2,088
Variance	<u>510</u>

Responsible Department/ANIMAL REGULATION

Site Number	#41	#42	#43	#44	#111
	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>
Inventory	1,495	244	372	88	835
Gallons Received	5,802	9,173	2,923	7,537	10,867
Total Available	<u>7,297</u>	<u>9,417</u>	<u>3,295</u>	<u>7,625</u>	<u>11,702</u>
Gallons Dispensed through					
Meter	(7,069)	(9,146)	(2,979)	(,7658)	10,021
Derived Balance	<u>228</u>	<u>271</u>	<u>316</u>	<u>(33)</u>	<u>1,681</u>
Inventory	<u>--</u>	<u>--</u>	<u>355</u>	<u>--</u>	<u>1,700</u>
Variance			<u>(39)</u>		<u>19</u>

Responsible Department/LIBRARY

Site Number	#45
	<u>Gas</u>
Inventory	245
Gallons Received	2,193
Total Available	<u>2,438</u>
Gallons Dispensed through	
Meter	(2,081)
Derived Balance	<u>357</u>
Inventory	280
Variance	<u>(77)</u>

Responsible Department/PUBLIC UTILITIES AND TRANSPORTATION

Site Number	#57	#58	#59
	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>
Inventory	145	532	140
Gallons Received	8,638	17,860	--
Total Available	<u>8,783</u>	<u>18,392</u>	<u>140</u>
Gallons Dispensed through			
Meter	7,260	10,338	203
Derived Balance	<u>1,523</u>	<u>8,054</u>	<u>(63)</u>
Inventory	459	891	218
Variance	<u>(1,064)</u>	<u>(7,163)</u>	<u>281</u>

Responsible Department/RECREATION AND PARKS

Site Number	Gas	#80 Diesel	#81 Gas	#82 Gas	#83 Gas	#84 Gas
Inventory	1,900	2,400	457	1,100	415	150
Gallons Received	167,167	22,817	2,794	19,819	18,866	7,233
Total Available	169,067	25,217	3,251	20,919	19,281	7,383
Gallons Dispensed through						
Meter	156,571	19,226	3,081	19,937	20,027	7,287
Derived Balance	12,496	5,991	170	982	(746)	96
Inventory	14,125	6,354	1,575	760	40	90
Variance	1,629	363	1,405	(222)	786	

Site Number	#85 Gas	#86 Diesel	#87 Gas	#88 Gas	#89 Gas
Inventory	220	850	1,300	54	410
Gallons Received	4,022	48,006	1,500	10,276	12,568
Total Available	4,242	48,856	2,800	10,330	12,978
Gallons Dispensed through					
Meter	3,881	47,913	1,756	9,566	12,083
Derived Balance	361	943	1,044	764	895
Inventory	357	786	695	87	480
Variance	(4)	(157)	(349)	677	(415)

Site Number	#91 Gas	#92 Gas	#93 Diesel	#94 Gas	#98 Gas
Inventory	205	325	900	56	130
Gallons Received	6,113	4,700	12,299	2,070	3,421
Total Available	6,318	5,025	13,199	2,126	3,551
Gallons Dispensed through					
Meter	5,937	4,829	12,183	--	3,616
Derived Balance	381	196	1,016		(65)
Inventory	--	165	225	219	145
Variance		(31)	791		210

Site Number	#99 Gas	#101 Gas	#102 Gas	#104 Gas
Inventory	750	785	80	1,255
Gallons Received	--	--	410	19,365
Total Available	750	785	490	20,620
Gallons Dispensed through				
Meter	--	--	--	19,164
Derived Balance				1,456
Inventory				1,400
Variance				(56)

Responsible Department/TRAFFIC

Site Number	#48	#49	#51
	<u>Gas</u>	<u>Gas</u>	<u>Gas</u>
Inventory	5,750	1,843	9,815
Gallons Received	87,725	5,215	56,473
Total Available	<u>93,475</u>	<u>7,058</u>	<u>66,288</u>
Gallons Dispensed through			
Meter	--	--	56,277
Derived Balance			<u>10,011</u>
Inventory	<u>16,120</u>		
Variance			

Responsible Department/STANDARDS

Site Number	#56
	<u>Gas</u>
Inventory	100
Gallons Received	10,518
Total Available	<u>10,618</u>
Gallons Dispensed through	
Meter	10,717
Derived Balance	<u>99</u>
Inventory	
Variance	

MONTHLY FUEL INVENTORY REPORT
(From Daily Record of Fuel and Oil Dispensed)

Fueling Site _____

A + B = C

<u>A</u>	<u>B</u>	<u>C</u>
Opening Inventory (From stick readings in bulk tanks - gals.) Date _____	Purchases (From delivery tickets - gals.)	Total to account for
Fuel Type Tank		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

D + E + F = G

<u>D</u>	<u>E</u>	<u>F</u>
Dispensed (From pump meter readings at begin- ning and end of month)	Closing Inventory (Stick reading) end of month Date _____	Unaccounted for fuel issues
Fuel Type		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

G

Total Accounted for
(must agree with C above)

U.C. BERKELEY LIBRARIES



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